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ABSTRACT

This report examines the nature of the expertise needed in most professions and higher level occupations based on findings of the Project on Liberal Learning Study. It is noted that all professions commonly hold that effective practice requires more than narrow technical specialization. The report argues that the competent practitioner needs both technical expertise and contextual understanding so that the practitioner possesses the ability to: (1) understand how the physical, social, economic, and political context in which the professional works affects and is affected by the activity; (2) communicate and often collaborate with both clients and colleagues of different backgrounds and expertise; and (3) deal with complexity and ambiguity and recognize the existence of alternatives and trade-offs. It stresses that these elements must be combined into a coherent curriculum is then both liberal and career oriented. Development of such curricula should constitute a top priority for all who are interested in furthering liberal learning within the professions. Contains a 13-item bibliography. (GLR)

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New Concepts of Professional Expertise: Liberal Learning as Part of Career-Oriented Education

Ernest A. Lynton

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University of Massachusetts at Boston
Graduate College of Education
Harbor Campus — W/2/143
Boston, Massachusetts 02125-3393

Phone: (617) 287-7740
Fax: (617) 287-7922

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NEW CONCEPTS OF PROFESSIONAL EXPERTISE: LIBERAL LEARNING AS PART OF CAREER-ORIENTED EDUCATION

Ernest A. Lynton
University of Massachusetts at Boston

ABSTRACT:

The nature of the expertise needed in most professions and higher level occupations is broadening because of changing organization and content of work. Today, a competent practitioner must be more than a narrow specialist. Curricular reviews aimed at ensuring liberal learning should abandon the false dichotomy between career - oriented and liberal education and begin by reexamining and broadening the major.

INTRODUCTION

In recent years, discussion of general education has once again intensified. Accelerating change, growing complexity, rapid globalization - these and related societal developments are widely seen as requiring more breadth of knowledge and a greater ability to think critically. In turn, such qualifications are considered to be the outcomes of the kind of liberal learning associated with general education. Many colleges and universities have reviewed their curricula and some have introduced interesting innovations. Yet many current revisions are deeply flawed because they perpetuate the long-standing but artificial dichotomy between the major and general education. (Cf., e.g., Lynton, 1982; Gaff, 1983, pp. 25 - 29; Boyer, 1987, pp. 102 - 115; Lynton and Elman, 1987, pp. 56 - 85; Stark and Lowther, 1988.) Too often, discussion of general education begins with the unexamined premise that the dominant metaphors for the major are depth and specialization, and that therefore it cannot contribute - and may even be antithetical - to the goals of liberal learning.

The newly completed Project on Liberal Learning, Study - in - Depth, and the Arts and Sciences Major of the Association of American Colleges takes issue with this fallacy. Its forthcoming report (AAC, 1991) will argue that "breadth - especially interrelating content from one's own to other fields - is of equal concern [*as depth*] to the major." Such breadth is even more important for the career - oriented major, yet it is just these concentrations which are usually considered as being most alien to liberal learning. Too many proponents of liberal learning tend to view any professionally oriented course automatically as narrow vocational training. This attitude is reinforced by the tendency to confuse "liberal arts" and "liberal education," using the two terms as synonyms. Liberal education is

considered to be strengthened by the inclusion of any liberal arts course: yet the wide-spread professionalization of the liberal arts was deplored by Jencks and Riesman as long ago as 1968 (Jencks and Riesman, 1968, pp. 20 - 27, 244.) At the same time, many curricular reformers look only to the liberal arts to provide liberal education. Rarely is there any discussion of ways in which liberal education can be provided within a professional school - and equally rare is any exploration of ways in which professional units can contribute to the liberal education of liberal arts majors.

In spite of many calls for change, some of which are cited above, too many current attempts at curriculum reform toward a broader, more liberal education have been distorted by these attitudes, particularly toward professional programs. Liberal or general education are considered as resulting only from arts and science courses, added to and distinct from any part of undergraduate education intended to prepare an individual for a career. The debate usually revolves about how to limit the number of professional courses and credits required for the major so as to be able to add more liberal arts courses. Consequently, the discussion about liberal learning too often degenerates into curricular turf battles about how many credit hours of the career - oriented major can be conquered by the arts and sciences, how many successfully defended by the professional faculty.

The artificial separation between general education and career preparation - indeed, between general education and any major - is made almost inevitable by the way in which the ongoing discussion is formulated. The common approach to the liberalization of the curriculum is, as it were, from the outside in, beginning with the ideal of the liberally educated individual and exploring the educational requirements of that goal separately from the objective of preparing an individual for a career. It is the purpose of this article to urge a basic reversal of perspective -

moving from the inside out by beginning with an examination of the nature of the competence and the expertise needed to be an effective practitioner of a profession or other higher level occupation in today's society. What should be the characteristics of the education which is intended to prepare an individual to function well as a manager, a teacher, an information specialist, a government official, a human service or health care provider ? The response to this question will indicate the crucial role of liberal learning as an integral and pervasive characteristic of career-oriented education itself rather than as a desirable but unrelated addition. Competence in professional practice requires that specialized know-how be combined with breadth of understanding into a single, coherent curriculum. Hence the first step in striving toward a more liberal education is to expand the major, particularly in career - oriented fields, from narrow specialization to being more inclusive. (Cf., e.g., Lynton, op.cit., Boyer, op.cit.)

This liberalization of the career - oriented curriculum will go a long way toward meeting the overall goal of liberal learning, but it will not, by itself, achieve that objective completely. The ideal of the liberally educated individual transcends even the broadest interpretation of professional competence. Thus there is, and will always continue to be a need for colleges and universities to provide opportunities for students to range beyond the limits of their area of concentration, however expansively these may be defined. Strong arguments can continue to be made for language acquisition and study abroad, for integrative core courses and capstone seminars unrelated to the major, and above all for opportunities to pursue intellectual and esthetic curiosities quite independently of career goals. But these curricular components should be seen as adding further dimensions and filling gaps <u>after</u> the career - oriented major is sufficiently expanded and enriched so as to educate competent practitioners with a broadly based expertise.

To take an "inside - out" perspective and begin the dialogue about liberal learning by exploring the real needs of adequate career preperation is important not only for substantive, intellectual reasons. It is politically valuable as well. No true curricular reform, no real liberalization of higher education can be accomplished without the whole - hearted involvement of the faculty in the professional schools and colleges. Important as well is the support of employers, professional associations and, especially, accrediting bodies. Faculty and external consituencies may pay a great deal of lip service to the value of liberal education but will continue to give priority to the perceived demands of specialization as long as liberal learning remains a broad concept of no direct concern to career - oriented goals. Genuine endorsement of liberal learning will come about only when such learning is recognized as an integral component of professional competence, and its pursuit therefore a matter of professional self - interest.

A further note might be added regarding the issue of gaining broader support for liberal education outside of the liberal arts. Because of the artificial dichotomy between liberal learning and career - oriented education, faculty in the professional units of a comprehensive institution are rarely involved in discussing general educational goals and even less frequently asked to contribute to the design of general education, core curricula and distribution requirements in the liberal arts units. It just does not occur to most faculty members (even those in the professional units) that a professor of engineering, of nursing, or of social work could have anything to contribute to the liberal learning of an arts and science major. How myopic a view; how sad a reflection of the illiberal compartmentalization of the academic enterprise! As examples on a few innovative campuses show, much could in fact be contributed to the general, liberal education of an arts and science

undergraduate by courses originating in a professional unit. One could imagine an overview of the social welfare system - with the added possibility of enhancing global awareness by including a comparative dimension. Equally appropriate would be a course concentrating on the social and economic impacts and the long range implications of technological change. Other examples are cited in the forthcoming AAC Report (AAC 1991) as well as in the periodic newsletter published by the New Liberal Arts Program of the Alfred P. Sloan Foundation (NLA) and other publications (Gamson 1984).

Of course these examples raise the question whether one can find faculty members in the pertinent professional schools with the expertise needed to teach such courses. That's where the loop is closed with the arguments made in subsequent sections of this paper. Many of the courses with which professional units can enrich the general education of non - professional majors deal with similar subject matter (though at different levels of technical detail and sophistication) as courses needed in the career - oriented major to broaden professional expertise. Hence the necessary faculty strength, if not present, should be developed either in the professional units or in cognate arts and science departments so as to offer the necessary courses both to professional as well as to arts and science majors.

THE CHANGING NATURE OF EXPERTISE

What, then, is the nature of the expanded expertise required for effective practice ? One must start with the obvious: technical know-how continues to be essential. All programs preparing for a career must, of necessity, have a strong element of specialization in order to provide a reasonable degree of technical expertise in the particular profession or occupation. That expertise has always been and continues

to be at the core of professional competence. However, it has become increasingly clear that specific expertise, however necessary, is not sufficient to provide the full spectrum of skills and understanding which have become essential to function well in most advanced occupations and professions. A narrowly trained expert may be well prepared to pursue research in a restricted field of specialization, or to be a staff analyst who crunches data for the benefit of the decision makers. But effective practitioners on the job require a broader, more inclusive range of understanding.

A broadened concept of expertise and its implications for professional education represent a fundamental change from the prevalent attitude during the post-war decades. The preliminary program booklet of the 1990 National Meeting of the Association of American Colleges carried a fitting, unattributed quote: "At the time the major was established, many fields proved guilty of what might be called physics envy..." That is an elegant way of saying that in the post-Sputnik era, every professional became a scientist and every occupation a science. We not only succumbed to the cult of the expert but defined such an expert in completely one-dimensional terms as someone who could find the unique solution to repetitive problems by rigorous analytical methods. Detailed factual knowledge and highly developed analytical skills were considered to be the earmarks of expertise; all else was seen as peripheral and largely irrelevant. Engineering became "engineering science;" many schools of business changed their name to "management science." Depth became the dominant characteristic of the major, and increasingly, as critics would put it, experts came to know more and more about less and less.

The pseudo-scientific concept of expertise resulting from the prevalent "physics envy" was never appropriate to fields other than the so-called exact sciences. The need for a more

adequate, broader definition of competence has existed for a long time and has been stated repeatedly. Today this need has become critical because of significant changes which are taking place both in the organization of work and in the nature of work. Each affects in a fundamental way the expertise needed for effective practice.

THE CHANGING ORGANIZATION OF WORK

In terms of the organization of work, the past few years have witnessed a remarkable change, particularly in the private sector. Reality always lags behind rhetoric, and one must take the many pronouncements of drastic restructuring of U.S. business and industry with many grains of salt. Yet even if the actual changes are less dramatic than what is often being described, a significant amount of decentralization and a decrease in the number of organizational layers have clearly taken place (cf., e.g., Detouzis et al., 1989, pp. 122 - 124.) Corporate structure has become leaner and more horizontal. Many enterprises consciously blur the traditional hierarchical, vertical differentiation of responsibilities. Individuals even at the lowest organizational levels are no longer supposed to accept without question orders coming from higher up. One also finds a strong trend toward categorical, lateral blurring of responsibilities, with increasing emphasis on team work, on close collaboration among design, manufacturing and sales personnel, and on direct contact of technical experts with external clients. Changes in the organization of work occur not only in large corporate structures but even more in small enterprises. They are happening in the public sector as well: a major slogan in school reform these days is school - based management and decentralized decision making.

As a consequence of these changes, individuals in many different settings have to assume greater responsibility, participate more directly in decisions, interact with a broader variety of colleagues and clients. As a result they must be substantially more than narrow specialists. Technical and managerial personnel in both the public and private sectors, as well as professionals in education and in human services, even at relatively low hierarchical levels, require an understanding of the context in which

they operate and an appreciation of the reciprocal relationship between their own work and external political, economic, and social factors. They need to have, as well, a sense of the legal and ethical issues pertinent to their activity, and be sensitive to environmental considerations. In short, they need to know and understand a great deal more than their own field of specialization in order to be competent as practitioners of their profession or occupation.

This does not mean either that a profound knowledge of their field of specialization has decreased in importance, nor that the future practitioner needs to be a jack - of - all - trades, a renaissance person with universal knowledge of all fields. As mentioned earlier, specialized expertise continues to be essential. At the same time, it is clearly absurd to expect universal expertise. But the profile of expertise, though remaining peaked at the particular area of specialization. now must be a broadened curve rather than a narrow spike.

During the past few years, a growing number of individuals and institutions have come to recognize the inadequacy of the traditional narrow conception of expertise. Many statements, articles, books and other sources can be cited which all point to the need for an expanded concept of expertise for the competent practitioner and which all, explicitly or implicitly, indicate that professional education must itself have the essential characteristics of liberal learning, rather than remaining characterized solely by depth, mitigated by unrelated add-ons in the liberal arts. The content of the career - oriented major itself must be expanded so as to allow students to acquire the necessary understanding of the context in which they will function as practitioners, and of the ethical and legal issues which they will confront. There is no unique way of going about this, but a general statement can be made: the necessary

expertise will not be acquired by means of the standard general education courses in the humanities or the social sciences provided as disconnected add-ons to the professional major. The usual introduction to political science, sociology or economics, or a traditional ethics course are quite inadequate to prepare future practitioners to recognize the issues they are going to face within the specific context of their professional activities.

The inadequacy of merely adding the traditional introductory courses is well illustrated in terms of the need for scientific and technological literacy. Individuals in non-technical occupations must acquire an understanding of the potential impact on their work of automation, new information and communication systems and other technological developments. They must also be able to communicate with their technical colleagues. Few individuals will acquire these abilities by means of an introductory science course. There is much too great a gap between Newton's Laws and the actual technology affecting the daily work of non-technical individuals. Instead, every professional program in non-technical fields should contain courses which focus on the technologies affecting both the day - by - day functions of practitioners as well as the decisions which they will have to make. The approach should be one of assessing the technology, focusing on the societal and organizational impact of new technologies, on their positive potential and their downside risks, and on various ways in which they can be used. An analogous approach is needed to provide the necessary "reciprocal literacy" by which technical experts can assess the economic, social, and political factors impinging on their activities, and can communicate about them with non-technical colleagues and clients. These kinds of insights directly enhance the competence of the practitioner much more than any detailed knowledge of the scientific principles involved in the technological advance, or of the abstract paradigms of the

pertinent social science. The purposes of such courses should be to enable individuals to assess the impact on their work of factors beyond their own area of specialization, not to make them mini-experts.

Expanding and enriching the professional major in this fashion is a necessary response to the demands of broader expertise. At the same time, such broadened programs can "help students not only to be technically prepared but also to discover the personal and social significance of their work....[*They will enable*] students not only to explore a field in depth, but also to help them put their field of special study into perspective." (Boyer, op.cit., pp. 109-110.) In short, they will go a long way in fostering truly liberal learning.

It is disappointing that to date the response to the call for a broader concept of expertise and the need for more liberal professional learning too often still consists merely of trying to squeeze a few more credits of liberal arts subject matter into an already crowded curriculum. There exist instances, as well, of going to the opposite and equally unsatisfactory extreme: to abandon all components of technical expertise and to concentrate only on process skills such as critical thinking and clarity of communication under the motto: "a liberal arts major is the best preparation for professional competence." That approach throws out the baby with the bathwater and, like the purely quantitative approach of adding a few general education courses, misses the essential point: Preparation for effective professional practice requires an integrated, coherent program in which all the mutually reinforcing elements of professional competence form part of a cumulative, interlocking whole which is greater than the sum of its parts. The kind of undergraduate professional major which is needed to meet the challenge of an expanded concept of expertise must avoid both extremes: narrow

specialization, or breadth without technical expertise.

Furthermore, the necessary broadening of knowledge and understanding of the modern expert must be as closely as possible related to the core of the expertise itself. Learning occurs most effectively when a connection is made between what is being taught and the learner's principal activity and interests. Yet few existing programs help students in making the connection between different portions of the curriculum, and in particular between general education and the career - oriented major.

To relate contextual understanding to the core activity of the future practitioner requires not only a broadening of the curriculum, but also an inversion of the usual progression from breadth to specialization. We must find a variety of ways of providing the necessary learning experiences late rather than early in the curriculum, at a stage at which students have already acquired considerable understanding as well as some practical experience of their specialized area of professional activity. A synthesis of the core specialty and its contextual aspects is needed, a pulling together of pertinent components. Capstone seminars, case studies and senior projects are among the instructional modes which could be used to impart the necessary contextual understanding. All share one fundamental problem: their success depends on a faculty which itself understands the reciprocal relationship between the practice of a profession and its context, and which itself has the kind of broadened expertise it seeks to develop in its students. As mentioned earlier, such understanding on the part of professional faculty is necessary as well if it is to contribute to the liberal learning of students majoring in the arts and sciences.

THE CHANGING NATURE OF WORK

Together with the consequences of changes in the organization of work, the concept of expertise is changing as well because of changes in the nature of work. In all kinds of ways the tasks of individuals in most occupations are becoming more complex, the issues and problems they are facing more ambiguous. It is becoming increasingly difficult to anticipate the consequences of even simple acts and to predict outcomes with any degree of certainty. In business, government, health care, social services, education and most other spheres of professional activity, reality is messy, problems are not well defined, and instead of unique solutions there exists in most situations a variety of options, each involving trade-offs among competing goals and values.

No one has described the challenges of the evolving nature of work more clearly than Donald Schön in his seminal book, The Reflective Practitioner (Schön, 1983.) He points out that the complexity and messiness of reality carry fundamental implications for the nature of expertise and competence of the practitioner. Broadening the content and range of expertise is not sufficient. The real change is in the way of knowing, in the epistomology of practice, in the habits of the mind. The quotation about "physics envy" is again pertinent. Because of physics envy most fields and subjects have been taught as if they were exact sciences and as if their practitioners face well defined, repetitive problems with unique solutions accessible through the rigorous application of a set of theorems and paradigms. Unfortunately, as Schön points out, real problems are rarely well defined, available data are usually insufficient for rigorous analysis, and there is no unique solution.

Schön is eloquent in addressing the fundamental fallacy of treating all professional activity as a science. So is

President Bok of Harvard. In a recent Annual Report dealing with the education of public officials at Harvard's Kennedy School, Bok emphasizes the distinction between policy analysis and policy making, He states that "the danger [*of excessive emphasis on analysis*] is that the teaching of policy making will be shaped to favor problems for which these sophisticated methods [*of rigorous, quantitative analysis*] are especially suited or, worse yet, that problems will be subtly altered to fit the procrustean bed of analytic technique." (Bok, 1977)

The message promulgated by Schön, Bok and others is that professional practice differs profoundly from carrying out controlled experiments in a physics laboratory. Professional competence requires not only a broadened expertise as discussed in the previous section, but also new habits of the mind in order to deal with complexity and ambiguity. That poses daunting educational challenges. Critical thinking and other aspects of higher-order reasoning are clearly key elements of professional competence. The education of future practitioners must help them to recognize the many different factors which affect a given situation, to discover what the real problems "out there" are, to identify available options and the trade-offs involved in each, to recognize the limits of what can be accomplished, and finally to make choices and compromises. Such skills, all components of effective critical thinking, cannot be acquired in an abstract fashion. Content and process cannot be separated. Teaching new ways of approaching complex pronlems must be directly related to the appropriate area of professional activity. Therefore professional curricula must be modified in a basic way. Adding some separate courses on higher modes of thinking is not sufficient.

Practical experiences, design exercises and case studies constitute probably the best way for future practitioners to

master the way of approaching and dealing with complex situations. But these program components must be used at different times and in different ways than is currently the case in many professional programs. Currently, clinical periods and internships, if they are used at all, are often placed at the end of the professional major because such practical experiences are viewed as an illustration of previously learned theory. But that approach is based on the false notion that practice consists of no more than the systematic application of theory. The "new epistemology" described by Schön recognizes that actual practice is much more complex, and consists of repeated iteration between a real situation and applicable but inadequate theory. Hence practical experience (or its simulation) should begin early in the curriculum and be used as a primary learning experience from which generalizations are drawn inductively not only in the practicum itself, but also through concurrent and subsequent classroom work. That is easily stated, but difficult to accomplish. It constitutes a basic modification of our traditional pedagogic approach. Consistent with the pseudo-scientific approach resulting from pervasive physics envy, most teaching in higher education is deductive, proceding from the general to the specific, from the theory to its application. Instead, if future practitioners are to develop the proper modes of thinking, their education must take a much more cyclical, iterative approach in which a great deal of learning occurs inductively, with repeated practical experiences providing the basis for analysis and generalization in the classroom. To achieve in this way the habit of mind to deal with complexity is important not only within the context of educating competent practitioners - it is, as well, central to any definition of the liberally educated individual.

SUMMARY

Effective practice of a large variety of advanced professions and occupations requires a new, expanded concept of expertise. This poses major challenges to professional education at both the undergraduate and the graduate levels. The new concept of professional expertise as well as the implications it has for education are broadly similar for a whole range of fields. There are, of course, differences in detail between, say, the practice of education and of management, or of public administration and of nursing. But they all have in common that effective practice requires more than narrow technical specialization and that expertise includes the ability to

--- understand how the physical, social, economic and political context in which the professional works both affects and is affected by the activity, as well as to be sensitive to pertinent legal and ethical issues;

--- communicate and often collaborate with both clients and colleagues of different backgrounds and different areas of expertise;

--- deal with complexity and ambiguity and recognizing the existence of alternatives and trade-offs.

This changing concept of expertise creates a nearly universal challenge to the undergraduate and graduate professional major. We can no longer afford to ignore it. Yet, to date, appropriate changes have as yet been slow, few, and inadequate. The goals of liberal learning have been pursued as add - ons to majors which continue to be characterized solely by depth. The response to the call for a broader concept of expertise and the need for more liberal professional learning too often consists merely of trying to squeeze a few more credits of liberal arts subject matter into an already crowded curriculum. There exist instances, as well, of going to the opposite and equally unsatisfactory extreme: to abandon all components of technical expertise

and to concentrate only on process skills such as critical thinking and clarity of communication under the motto: "a liberal arts major is the best preparation for professional competence." That approach throws out the baby with the bathwater and, like the purely quantitative approach of adding a few general education courses, misses the essential point: The competent practitioner needs both technical expertise and contextual understanding. These elements must be combined into a coherent curriculum in which all the mutually reinforcing elements of professional competence form part of a cumulative, interlocking whole which is greater than the sum of its parts. Such a curriculum is, by its very nature, both liberal and career - oriented. Its development should constitute a top priority for all who are interested in furthering liberal learning.

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